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ABSTRACT

As part of a multiphase evaluation of Job Corps vocational training in fiscal year 1982, the cost of Job Corps operations was analyzed. Because Job Corps is a social program that encompasses more than just vocational training, its costs exceed those of most other vocational education programs. The total Job Corps costs for operating 106 centers across the nation in fiscal year 1982 were $383,316,876. Only 13 percent of this total was for vocational training expenses. The average cost per job placement was $3,076, with costs for heavy equipment operators amounting to $8,585 per placement and costs for landscapers the least expensive at $1,080 per job placement. Costs per job placement were 44 percent less for predominantly female occupations. Attempts to compute the relative effectiveness of Job Corps vocational training by occupational grouping indicated that individuals who received training in heavy equipment operation, cement masonry, and electrical occupations showed the largest income gains after participation in Job Corps programs. (Ten tables are included throughout this report and its appendix.) (MN)

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ED244087

JOB CORPS

VOCATIONAL EDUCATION OFFERINGS REVIEW

Documentation Report No. 4

Cost Analysis

September 1983

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
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Documentation Report No. 4

-Cost Analysis-

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Documentation Report No. 4

Cost Analysis

Introduction

Because Job Corps is a social program that encompasses more than just vocational training, its costs exceed those of most vocational education programs. The costs of residential living, health care, food, clothing, counseling, and basic education courses; as well as vocational training, boost Job Corps' current costs per enrollee year past $10,000.

According to the annual Center Financial Reports for FY 1982 (which do not include National Contract costs) Job Corps' costs for operating 106 centers across the nation in FY 1982, were $383,316,876. Table A breaks down this total cost figure by region and cost categories within regions.

As the table illustrates, the percentage of total Job Corps costs attributable to vocational training equipment and staff is relatively small. Only 13% of the total money spent at the centers in FY 1982 was for vocational training expenses. However, the National Contractors' costs for training were not included in these cost figures and in some cases these contractors provide a large amount of the vocational training on center. Even with the addition of National Contractor costs (approximately $27 million) the total vocational training costs would not exceed 20% of the total amount spent in Job Corps in FY 1982.

Table A

Costs for Center Operations in FY 1982 (excluding National Contracts)

	Total Center Costs	Corpsmember Years	Cost Per Corpsmember Year	All Vocational Costs	Percent of Total
National	$383,316,876.00	38,030.4	$10,079.22	$53,148,789.00	13.0%
Region I	13,377,237.00	1,395.2	9,588.04	1,376,961.00	10.3%
Region II	28,934,303.00	2,918.9	9,912.74	3,344,191.00	11.6%
Region III	51,233,409.00	4,892.3	10,472.25	6,497,453.00	12.7%
Region IV	83,181,092.00	9,097.4	9,143.39	9,500,080.00	11.4%
Region V	31,867,470.00	3,189.5	9,991.37	4,369,491.00	13.7%
Region VI	55,801,279.00	6,059.2	9,209.35	7,397,760.00	13.3%
Region VII	17,356,796.00	1,711.6	10,140.69	3,125,281.00	18.0%
Region VIII	30,854,998.00	2,691.6	11,463.44	5,741,586.00	18.6%
Region IX	42,503,762.00	3,855.3	[illegible],024.76	6,703,361.00	15.8%
Region X	28,206,530.00	2,219.4	12,709.08	5,092,622.00	18.1%

Since a relatively low percentage of total costs can be attributed to vocational training, Job Corps can place less emphasis on the cost effectiveness of vocational training than can other organizations which provide fewer ancillary services. The emphasis of Job Corps is upon job placement. If a program can produce high placement rates, higher training costs can be tolerated. The primary question is how high can these costs go to justify high placement rates. This cost analysis analyzes costs in relation to the outcome produced to determine at what level training occupations can be considered cost effective.

Cost Analysis Methodology and Problems

The goals of the cost analysis were to obtain a measure of comparative costs for training in each vocational training area offered by Job Corps and to determine if there were differences in costs among the various training providers for the same occupation. To accomplish these goals, cost data from the centers, Civilian Conservation Centers and National Contractors were compared with outcome data from Job Corps' Management Information System (MIS). The research was meant only to be a cost analysis, not a cost/benefit analysis. There were insufficient data to measure the benefits of each type of vocational training or service provider.

Two standard units of analysis were necessary to compare costs for each vocational training program. They were Cost Per Job Placement and Cost Per Training Year. While other cost variables such as Cost Per Completer and Cost Per Training Match could have been used for the analysis, Cost Per Training Year and Cost Per Placement were chosen because they represent the outcome measures most often

requested by policy makers. Furthermore, time constraints precluded reconciliation of information on completers and job training match when the occupation of training of FY 1982 terminees were revalidated/ corrected during the summer of 1983. The only other variable collected, Average Entry Wage, is not by itself a determinative factor since duration of post-enrollment employment has been found to be the major element in enhanced earnings of public employment and training program participants. Consequently, Job Placement and Cost Per Training Year were used as the comparison variables. The ultimate goal of Job Corps is to place youths in jobs, and the cost of achieving that end is of primary importance. Cost Per Training Year is of secondary importance.

On short notice, Centers, Civilian Conservation Centers and National Contractors were asked to report vocational costs for each of their vocational training areas according to the D.O.T. level. Each of the three groups commonly keep vocational cost data at the vocational program or cluster level and do not break this data out for each specific training area or D.O.T. code within a cluster. As a result, much of the data received from them represents their "best guess" of the costs attributable to each specific occupational training area.

Each was mailed several copies of a form which requested:

1. a specific list of all occupations for which the center provided training followed by the D.O.T. code for that occupation;

2. the number of slots that were contracted to other institutions and to whom they were contracted; and

3. the number of training years and the total vocational cost expended for each training occupation at the D.O.T. level (see Table IV-A).

(For the purposes of this analysis, vocational costs were defined as expenses incurred in FY 1982 for vocational programs, personnel, materials and supplies, services, rentals and transportation - the definition used on form MA2-223a of the Center Financial Report. This definition did not include capital costs such as equipment purchase and maintenance. These expenses vary greatly from year to year and contribute to total vocational training costs.)

The data on costs by D.O.T. were submitted twice. The initial effort did not allow center reported costs to be appropriately lined up with the National Job Corps Management Information System (MIS) occupational titles. After the coding system used by the MIS was clarified and centers were asked to recode their trainee data accordingly, the second effort obtained more useful data. Sixty-nine of the 72 Contract Centers and all 30 Conservation Centers provided usable data within the time constraints imposed by the study.

These 99 centers reported total vocational costs (excluding capital costs) of $46,271,199.00 for FY 1982. The MIS reported outcome data for 32,033* trainees who had stayed in Job Corps for more than 90 days. These two information sources were combined to obtain the data necessary for the cost analysis.

The use of these two different data sources presented a problem in the analysis of costs and outcomes. The MIS reported outcome data on all corpsmembers for whom placement information was collected during FY 1982. Those for whom placement was reported in FY 1982 may have actually received most of their training in FY 1981. On the other hand, the cost and training year data

received from the Centers, CCCs and National Contractors were those costs accrued during FY 1982. Because of this the analysis is actually comparing FY 1982 costs and training years to placement outcomes of corpsmembers who were trained in FY 1981 and FY 1982.

This "data overlap" presents minimal problems when data from the large Job Corps program has been summed nationally and the training has changed minimally from year to year. The result of comparing these two data sources is like comparing a "typical year's" costs and training years to a "typical year's" placement outcomes -- not necessarily the same year. However, with some specific training programs at specific centers it does cause a problem. If a program started in FY 1982 it will have accrued costs and training years but few terminees and job placements will appear in the MIS data. Its positive outcomes will not likely be visable until FY 1983. Likewise, those programs which were cancelled before FY 1982 might still show terminees and job placements from FY 1981 with minimal or no costs shown in FY 1982. Fortunately, this problem is minimal and in most cases was discovered and solved (neither data were accepted) but the overlap problem may have a slight influence on the cost data of specific occupations even though the data is summarized nationally.

Cost Analysis

Table B represents a national summary of cost data by the type of training provider. This table includes only summations of occupations which nationally have at least 25 trainees who were enrolled in Job Corps for more than 90 days. Total vocational costs, the number of trainees, the number job placed, and the number of training years are listed for each occupation. These figures are displayed separately

Table B

National Summary of Vocational Costs

By Training Provider

	Number Trained	Number Job Placed	Number of Training Years	Vocational Costs	Cost Per Training Year	Cost Per Job Placement
Total	32,033	14,890	34,836	$45,804,574.00	$ 1,314.00	$ 3,076.00
Center Contracts	23,932	10,392	25,662	20,836,117.00	812.00	2,005.00
CCC Contracts	3,106	1,601	2,904	6,480,190.00	2,231.00	4,047.00
National Contracts	4,995	2,897	6,270	18,488,267.00	2,948.00	6,381.00

for the Contract Centers, the CCCs, and the National Contractors, and are totalled for an overall look at vocational costs in Job Corps. The two outcome measures, Cost Per Training Year and Cost Per Job Placed are computed from these raw numbers and displayed in the last two columns. The data are also displayed for each region in Table IV-B-1. Totals on this table differ slightly from the national statistics in Table B because each regional table includes only summations of those occupations which had 10 or more trainees in that region. Several occupations had national trainee totals of 25 or more but had individual regional totals of less than 10.

The Average Cost Per Job Placement, which is total vocational costs of $45,804,574.00 divided by total number job placed (14,890) is $3,076.00 when averaged over all groups (Table B). The Average Cost Per Training Year is $1,314.00. Table B illustrates that center-contracted training is by far the least expensive at $2,005.00 per job placement and $812.00 per training year. Civilian Conservation Center training was more than twice as expensive at $4,047.00 per job placement and $2,231.00 per training year. National contracted training more than triples the cost of Contract Center training with a Cost Per-Job Placement of $6,381.00 and a Cost Per Training Year of $2,948.00.

This national summary indicates that type of training provider is a significant factor in the cost of training programs in Job Corps. Much of these cost differences are due to the type of training programs offered by each of the three training providers. The curriculum and length of training time differ dramatically from one program to the next with the nationally contracted programs traditionally being longer in duration than center or CCC contracted programs. However, the ultimate objective of Job Corps is to place its terminees in jobs once

the training is completed. Some programs may have higher costs because of their longer duration or the type of training that is offered but they may also produce higher placement rates. Because of this, the most objective measure of cost effective training is to divide the programs' vocational costs by the number of trainees that are placed on jobs after leaving Job Corps. If one type of training can produce job placements at a lesser rate than another, it is the more cost effective of the two.

Table C ranks the 22 largest occupations (in terms of number trained) according to the vocational training costs expended nationally in FY 1982. Costs were broken out by training provider if there were at least 25 trainees in each group, showing the total vocational costs, number job placed and Cost Per Job Placement for each. These 22 occupations account for almost 83.7% of the corpsmembers trained in Job Corps and 80.0% of the vocational training dollars expended.

More money was spent nationwide on Carpenter Construction than on any other Job Corps occupation. In FY 1982, almost seven million dollars were spent on training in Carpenter Construction. Job placements produced from this expenditure were 1,118 at a Cost Per Job Placement of $6,222.00. The Combination Welder program placed 352 more trainees for almost three million dollars less, producing a Cost Per Job Placement of $2,660.00.

Of these 22 largest training occupations, Heavy Equipment Operator was the most expensive at $8,585.00 per job placement and Landscaper was the least expensive at $1,080.00 per job placement.

Table C

TWENTY TWO LARGEST TRAINING OCCUPATIONS (No. of Trainees) RANKED IN ORDER OF VOCATIONAL COSTS FOR FY 1982

TRAINING OCCUPATION	OVERALL COSTS		COST PER JOB PLACEMENT			
	COSTS	Number Job Placed	National Average	Contract Centers	Civ. Conser. Centers	National Contractors
1. Carpenter Construction	$ 6,957,019.00	1,118	$ 6,222.00	$ 2,742.00	-	$ 7,491.00
2. Combination Welder	1,910,840.00	1,470	2,660.00	2,329.00	$ 3,250.00	1,386.00
3. Custodial Maintenance	1,176,298.00	910	1,710.00	2,767.00	5,262.00	4,440.00
4. Cook	2,954,172.00	1,076	2,745.00	1,737.00	5,169.00	-
5. Brick/Stone Mason	2,529,234.00	617	4,099.00	1,835.00	1,559.00	5,897.00
6. Clerk Typist	2,489,660.00	1,208	2,060.00	1,763.00	6,666.00	7,780.00
7. Painter	2,061,855.00	497	4,152.00	1,290.00	-	5,835.00
8. Nurse Assistant	1,918,269.00	1,165	1,646.00	1,646.00	-	-
9. Heavy Equipment Operator	1,880,167.00	219	8,585.00	5,956.00	-	11,337.00
10. Auto Service/Repair	1,790,689.00	674	2,656.00	1,731.00	2,911.00	7,777.00
11. Cement Mason	1,722,550.00	314	5,485.00	3,018.00	1,945.00	5,914.00
12. Auto Body Repair	886,991.00	412	2,152.00	1,836.00	-	5,457.00
13. Electrician	872,964.00	399	2,187.00	1,644.00	-	3,791.00
14. Plumber	842,271.00	265	3,178.00	2,426.00	-	4,008.00
15. Auto Mechanic Helper	819,748.00	321	2,517.00	2,424.00	1,129.00	-
16. Welder, Spot	664,927.00	266	2,500.00	2,265.00	4,491.00	-
17. Clerk, General	466,104.00	300	1,553.00	1,340.00	-	2,556.00
18. Electronic Assembler	180,744.00	141	1,116.00	1,116.00	-	-
19. Keypunch Operator	367,859.00	153	2,404.00	2,404.00	-	-
20. Bookkeeper	257,777.00	120	2,148.00	2,148.00	-	-
21. Retail Sales Clerk	229,662.00	189	1,215.00	1,215.00	-	-
22. Landscaper	204,300.00	189	1,080.00	1,080.00	-	-
TOTAL	$17,586,124.00	12,234	$1,072.00	$1,966.00	$4,221.00	$6,477.00

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The Average Cost Per Job Placement of the 22 occupations was $3,072.00, just slightly below the Average Cost Per Job Placement for all occupations ($3,076.00). However, the costs by training provider again differed dramatically. For the 22 large training occupations, National Contractors averaged $6,477.00 per job placement, compared to the CCCs' $4,221.00 and the Centers' $1,966.00. In all occupations where both Contract Centers and National Contractors had training programs, the Contract Centers had lower costs per job placement. Contract Centers were also less expensive than CCCs in those occupations for which both provided training. The National Contractors were less expensive than CCCs in one occupation, Custodial Maintenance, but were more expensive in the other five occupations in which each trained at least 25 corpsmembers.

Table IV-C-1 shows vocational costs for all 104 training occupations with more than 25 trainees who stayed in Job Corps more than 90 days and whose training contract was procured by either centers, CCCs or National Contractors. This table presents total vocational costs along with the number of trainees, the number of jobs placed, the number of training years, and the two analyzed variables produced from these statistics; Cost Per Training Year and Cost Per Job Placement. Training occupations that were less expensive than the National Average Cost Per Job Placement (3,076) can be considered cost effective. Occupations exceeding this figure are less cost effective and those whose cost per job placement are more than twice the national average ($6,152.00) are flagged with a dollar sign ($) in the last column for having very high costs. Some of the high cost occupations have good job placement rates but costs in excess of twice the national average indi-

cate that these training occupations still do not get enough job placements for the resources expended upon them. The 12 training occupations listed in Table D have more than 25 trainees and have been flagged for costs exceeding twice the national average of $3,076.00. They are listed in order of Cost Per Job Placement.

Predominantly Male Training Occupations vs. Predominantly Female Training Occupations - Cost Factors

Documentation Report No. 1 summarized data for occupations which, in the Job Corps environment, had predominantly female enrollment and those which had predominantly male enrollment. An occupation was considered to have predominantly female enrollment if the percentage of female trainees in the occupation was at least 50% higher than the overall percentage of females in Job Corps (35.1%). In other words, if an occupation had over 52.6% female enrollees it was considered to have predominant female enrollment. Those occupations that had 50% less than the average percents of females (17.6% or lower) were considered to have predominantly male enrollment. The occupations between 17.7% and 52.6% female were considered relatively balanced.

Table E presents cost data by predominantly male, predominantly female, and balanced occupations. As the table illustrates, the Cost Per Job Placement for predominantly female occupations is 44% less than predominantly male occupations despite the fact that females have a much lower placement rate than the males (37.3% vs. 51.4%). Cost Per Training Year for predominantly female occupations is also quite a bit less than that for predominantly male occupations ($1,025 compared to $1,633).

No causality is implied by these statistics. Differences in costs in predominantly male vs. predominantly female occupations may be only a function of the duration of training or the service providers

Table D

TRAINING OCCUPATIONS WITH COST PER JOB PLACEMENT
EXCEEDING TWICE THE NATIONAL AVERAGE

TRAINING OCCUPATION	TRAINING PROVIDER	VOCATIONAL COSTS	NUMBER JOB PLACED	COST PER JOB PLACED
Engineering Aide/Rodman	National	$ 267,679	20	$ 13,384
Heavy Equipment Operator	National	1,213,048	107	11,337
Mail Clerk	National	50,228	5	10,046
Heavy Equipment Repair	National	204,495	23	8,891
Railway Clerk	National	608,319	71	8,568
Heavy Equipment Repair	Center	248,353	30	8,278
Clerk Typist	National	318,991	41	7,780
Auto/Service Repair	National	1,606,642	78	7,777
Carpenter Construction	National	6,137,157	819	7,493
Plasterer	National	1,115,589	161	6,928
Clerk Typist	CCC	153,324	123	6,666
Tilesetter	National	220,944	35	6,313

Vocational training costs for these occupations, which exclude capital costs, can be considered excessive for the placement rates they achieve.

Table E. Cost Per Job Placement by Predominant Sex of Training Occupation

Predominantly Male Training Occupations	Cost Per Job Placement	Predominantly Female Training Occupations	Cost Per Job Placement	Relatively Sex Balanced Occupations	Cost Per Job Placement
Combination Welder	$ 2,660.00	Clerk Typist	$ 2,060.00	Cook	$ 2,745.00
Carpenter Construction	6,222.00	Nurse's Assistant	1,646.00	Electronics Assembler	1,116.00
Custodial Maintenance	1,710.00	Clerk, General	1,551.00	Painter	4,152.00
Auto Service Repair	2,656.00	Accounting Clerk	2,095.00	Cement Mason	5,485.00
Brick/Stone Mason	4,099.00	Retail Clerk	1,205.00	Offset Printer	2,567.00
Auto Mechanic Helper	2,537.00	Bookkeeper	2,148.00	Baker	2,338.00
Spot Welder	2,500.00	Keypunch Operator	2,404.00	Landscaper	1,080.00
Electrician	2,187.00	Ward Clerk	1,575.00	Stock Clerk	4,817.00
Plumber	3,178.00	Cashier/Checker	1,520.00	Draftsman	2,617.00
Auto Body Repair	2,152.00	Receptionist	2,012.00	Warehouseman	1,000.00
Air Cond/Ref Mech.	1,873.00	Teacher, Nursery	1,605.00	Electrical Appl. Rep.	1,641.00
Plasterer	6,928.00	Medical Assistant	3,492.00	Security Guard	1,800.00
Heavy Equipment Operator	8,585.00	Railway Clerk	8,568.00	Auto Parts Clerk	1,054.00
Service Station Attendant	2,478.00	Lic. Practical Nurse	4,954.00	Kitchen Helper	1,822.00
Heavy Equipment Repair	8,544.00	Secretary	4,409.00	Electronic Technician	3,552.00
Forestry & Conservation	2,626.00	Hospital Dietician Aide	1,372.00	Small Gas Engine Rep.	2,971.00
Construction Labor	5,493.00	Waiter/Waitress	2,174.00	Medical Lab Assistant	4,934.00
Electrician Helper	2,453.00	Teller	1,209.00	Telecommunications	2,214.00
Welder, Gas Arc	1,022.00	Dental Assistant	1,957.00	Prof. Program Aide	959.00
Forklift Operator	1,163.00	Cosmetologist	3,651.00	Eng. Aide/Rodman	13,384.00
Machinist	2,325.00	Mail Clerk	10,046.00	Animal Caretaker	3,277.00
Machine Operator	1,711.00	Calculator Machine Oper.	1,305.00	Floor Layer	3,740.00
Machine Operator, Lathe	2,358.00	Duplicating Machine Oper.	1,945.00	Furniture Upholsterer	2,070.00
Diesel Mechanic	2,933.00	Stenographer	4,788.00	Pest Control	607.00
Sheet Metal Worker	1,879.00			Cook Short-order	1,859.00
Meat Cutter	2,321.00				
Radio/TV Repair	2,699.00				
Insulation Worker	1,499.00				
Solar Installer	3,140.00				
Tilesetter	6,313.00				
Deckhand	4,677.00				
Average (Total Dollars Divided by Total Job Placements)	1,682		2,059		2,893

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Table F. Estimates of Increases in Annual Earnings Per Corpsmember by Occupational Grouping and Sex
(Based on an Average Gain of $655.00)

Male			Female		
Training Occupation	Number of Trainees	Estimated Earnings Increase	Training Occupation	Number of Trainees	Estimated Earnings Increase
Heavy Equipment Operator	73	$ 2,618.00	Clerical and Sales, Other	50	$ 2,935.00
Clerical and Sales	49	2,119.00	Construction, Other	20	2,307.00
Cement Mason	37	1,899.00	Industrial Production, Other	25	2,081.00
Industrial Production	140	1,697.00	Keypunch Operator	42	1,631.00
Combination Welder	104	1,483.00	Clerk, Other	47	1,470.00
Construction, Other	45	1,434.00	Retail Sales Clerk	20	1,216.00
Drafting	24	1,172.00	Cashier/Checker	19	591.00
Electrician	39	1,070.00	Clerk Typist	138	347.00
Carpenter Construction	202	1,001.00	Food Service, Other	26	341.00
Auto Mechanic Helper	44	644.00	Nurse's Assistant	180	181.00
Mechanic Repairer	161	413.00	Offset Printer	18	-348.00
Plasterer	21	317.00	Health, Other	14	-634.00
Cook	126	346.00	Cook	24	-679.00
Spot Welder	30	209.00	Spot Welder	13	-897.00
Auto Body Repair	76	156.00			
Electrical Appl. Repair	43	145.00		691	
Custodial Maintenance	188	32.00			
Meat Cutter	11	-151.00			
Construction Labor	31	-270.00			
Brick/Stone Mason	108	-292.00			
Baker	17	-476.00			
Plumber	18	-482.00			
Painter - Paperhanger	87	-592.00			
Nursery or Forestry	33	-689.00			
Offset Printer	18	-1,496.00			

involved. However, because the costs are so different, more study needs to be done in order to determine the cause for the discrepancy.

Earning Potential of Job Corps Training Occupations

Using a sample of 1977 Job Corpsmembers (N=3,950) and a control group (N=1,350), Mathematica Policy Research Inc. did a longitudinal study to determine whether the Job Corps program produces economic benefits that exceed the resources they expend. This cost-benefit analysis was done by surveying the corpsmembers before they left Job Corps and at 9, 24, and 54 months after the initial survey. The same survey was conducted with a comparable group of disadvantaged youths who had not attempted to enroll in Job Corps. The study determined that "the Job Corps program, overall, was found: (1) to increase earnings of former participants by just over $655 per year (over a 15% increase in earnings), (2) to significantly reduce the welfare dependence of corpsmembers, and (3) provide economic benefits to society that exceed the costs to society of investing in Job Corps."

Mathematica was asked by the National Job Corps Office if they could use the same data base to analyze benefits according to the occupation in which the corpsmembers were trained. The resulting report is summarized in Table IV-D-1.

Producing information on the benefits or earning potential of Job Corps training occupations using this data base had some severe limitations: 1) The study was not designed to analyze data by training type, so the sample was not drawn to insure adequate sample size and balance between the control and participant groups for each occupation. 2) Economic data from the late seventies would differ considerably from 1982 data because of the recession and inflation factors.

3) The primary analysis tool, Multiple Regression Analysis, is not suitable for sample sizes of less than 100, so analysis for the occupations having less than 100 trainees in the study produced unreliable and sometimes distorted results. 4) Data from less than 30 distinct occupations were analyzed.

Table F lists the occupations in order of the largest to the smallest increase in earnings realized by those in Job Corps when compared to the control group. The low sample size and presence of negative earnings illustrate that the data is subject to distortion and should not be used to judge occupations.

Many of the occupational titles used in the table differ from those currently being used and many of them have the term "other" attached to them. For this reason, it would be difficult to discern the difference in earning potential of current Job Corps occupations or base any kind of cost/benefit analysis on the results of this study.

Table IV A-1
Form Submitted to the Centers for the Cost Analysis

COMPLETE THIS FORM ONLY AFTER REVIEW OF THE JOB CORPS OCCUPATIONAL TRAINING CLASSIFICATION STRUCTURE

REGION: _____

CENTER: _____

JOB CORPS CENTER
VOCATIONAL TRAINING FINANCIAL REPORT
FISCAL YEAR 1982
OCTOBER 1, 1981 - SEPTEMBER 30, 1982

PREPARED BY: _____

DATE: _____

JOB CORPS MIS OCCUPATIONAL CODE AND TITLE	Vocational Training		Slots Contracted	Instruction Conducted by	Corpsmember TRAINING YEAR	Total Vocational Training Costs
	Center Course Title	Nine Digit D.O.T. Code				

Table IV B-1
Regional Summary of Vocational Costs
By Training Provider

		Number Trained (90 + Days)	Number Job Placed	Number of Training Years	Vocational Costs	Cost Per Training Year	Cost Per Job Placed
Region I:	Contract Center	780	363	979	$ 846,912	$ 865	$ 2,333
	CCC	-	-	-	-	-	-
	National	24	11	26	39,447	1,517	3,586
Region II:	Contract Center	1,462	571	2,019	1,735,265	859	3,039
	CCC	35	13	28	127,772	4,563	9,829
	National	155	91	192	728,841	3,796	8,009
Region III:	Contract Center	2,488	1,248	2,523	1,465,017	581	1,174
	CCC	148	90	121	219,894	1,817	2,443
	National	1,175	636	1,377	2,582,719	1,876	4,061
Region IV:	Contract Center	6,929	2,506	6,654	4,842,728	728	1,932
	CCC	781	382	724	1,397,686	1,931	3,659
	National	731	368	968	2,327,591	2,405	6,325
Region V:	Contract Center	2,623	611	2,930	1,785,149	609	2,922
	CCC	241	73	205	346,784	1,692	4,750
	National	245	108	306	973,361	3,181	9,013
Region VI:	Contract Center	4,226	2,272	5,004	4,188,476	837	1,844
	CCC	260	169	328	680,980	2,076	4,029
	National	456	320	713	1,728,352	2,424	5,401
Region VII:	Contract Center	948	448	855	953,837	1,116	2,129
	CCC	214	123	115	486,890	4,234	3,958
	National	249	140	266	958,499	3,603	6,846
Region VIII:	Contract Center	1,122	458	1,414	1,896,594	1,341	4,141
	CCC	511	258	519	1,233,441	2,377	4,781
	National	534	329	602	2,401,958	3,990	7,301

Table IV B-1
Regional Summary of Vocational Costs
By Training Provider

		Number Trained (90 + Days)	Number Job Placed	Number of Training Years	Vocational Costs	Cost Per Training Year	Cost Per Job Placed
(Continued)							
Region IX:	Contract Center	2,491	1,428	2,279	$2,491,385	$ 1,093	$ 1,745
	CCC	-	-	-	-	-	-
	National	602	401	752	2,339,419	3,111	5,834
Region X:	Contract Center	642	360	446	409,369	918	1,137
	CCC	858	468	691	1,936,032	2,802	4,137
	National	725	427	797	3,463,561	4,346	8,111
		N=31,655	14,672	33,833	44,587,959	1,318	3,039
	Center	23,711					
	CCC	3,048					
	National	4,896					

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
01. SUB-PROFESSIONAL:						
Draftsman (Center)	$189,890	160	72	169	$1,124	$2,637
Cosmetologist (Center)	$116,863	67	32	86	$1,358	$3,651
Engineering Aide/Rodman (National)	$267,679	30	20	30	$8,923	$13,384
Electronic Technician (Center)	$78,161	25	22	26	$3,006	$3,552
Professional Program Aide (Center)	$15,346	42	16	32	$480	$959
02. CLERICAL AND SALES:						
Clerk Typist: (Total)	$2,489,660	3269	1208	3812	$653	$2,061
(Center)	$2,017,345	3154	1144	3607	$559	$1,763
(CCC)	$153,324	64	23	102	$1,503	$6,666
(National)	$318,991	51	41	103	$3,097	$7,780
Duplicating Machine Operator (Center)	$31,156	73	16	40	$779	$1,947
Key Punch Operator: (Center)	$367,859	359	153	373	$971	$2,404
Stock Clerk (CCC)	$207,110	85	43	68	$3,046	$4,817
Retail Sales Clerk (Center)	$229,662	433	189	390	$588	$1,215

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
Accounting Clerk (Center)	$259,811	276	124	377	$689	$2,095
Secretary (Center)	$149,912	69	34	126	$1,189	$4,409
Bookkeeper (Center)	$257,777	313	120	407	$633	$2,148
Calculating Machine Operator (Center)	$20,873	47	16	35	$596	$1,305
Mail Clerk (National)	$50,228	38	5	46	$1,092	$10,046
Cashier/Checker (Center)	$85,153	161	56	156	$545	$1,520
Clerk, General (Total)	$447,752	660	296	595	$752	$1,512
(Center)	$340,384	598	254	561	$606	$1,340
(National)	$107,368	62	42	34	$3,158	$2,556
Receptionist (Center)	$102,638	144	51	165	$622	$2,012
Teller (Center	13,300	27	11	29	$458	$1,209
Stenographer (Center)	$71,828	46	15	109	$658	$4,788
Ward Clerk (Center)	$130,781	188	83	222	$589	$1,575
Railway Clerk (National)	$608,319	101	71	147	$4,138	$8,568

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
03. SERVICE OCCUPATIONS:						
Custodial Maintenance (Total)	$3,376,298	1998	910	2256	$1,497	$3,710
(Center)	$1,441,813	1226	521	1349	$1,068	$2,767
(CCC)	$1,326,088	540	252	527	$2,516	$5,262
(National)	$608,397	232	137	380	$1,601	$4,440
Security Guard (Center)	$91,821	84	51	99	$927	$1,800
Teacher, Nursery School (Center)	$60,981	124	38	49	$1,245	$1,605
Animal Caretaker (Center)	$45,882	25	14	14	$3,277	$3,277
04. FORESTRY, FARMING, AND GARDENING:						
Landscaper (Center)	$204,300	397	189	236	$865	$1,080
Forestry and Conservation Worker (CCC)	$191,718	127	73	97	$1,976	$2,626
Pest Control (Center)	$14,558	42	24	23	$633	$607

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
05. FOOD SERVICE:						
Waiter or Waitress (Center)	$34,786	31	16	16	$2,174	$2,174
Cook (Total)	$2,946,844	2586	1076	2465	$1,195	$2,739
(Center)	$1,323,650	1940	762	1861	$711	$1,737
(CCC)	$1,623,194	646	314	604	$2,687	$5,169
Baker (Center)	$203,485	244	87	234	$869	$2,338
Meat Cutter (Center)	$97,483	71	42	94	$1,037	$2,321
Cook, Short order (Center)	$63,225	54	34	30	$2,107	$1,859
Kitchen Helper (Center/CCC)	$40,096	32	22	35	$1,145	$1,822
06. AUTOMOTIVE AND MACHINERY REPAIR:						
Auto Mechanic Helper (Total)	$819,748	671	323	830	$988	$2,538
(Center)	$657,019	562	271	733	$896	$2,424
(CCC)	$162,729	109	52	97	$1,678	$3,129

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
Auto Service Repairman (Total)	$1,790,689	1334	674	1436	$1,247	$2,657
(Center)	$808,460	981	467	1066	$758	$1,731
(CCC)	$375,587	222	129	214	$1,755	$2,911
(National)	$606,642	131	78	156	$3,889	$7,777
Small Gas Engine Repairman (Center)	$86,172	67	29	132	$653	$2,971
Auto Body Repairman (Total)	$886,993	828	412	1003	$884	$2,153
(Center)	$690,538	777	376	949	$725	$1,840
(National)	$196,455	51	36	54	$3,638	$5,457
Auto Parts Clerk (Center)	$30,555	45	29	53	$577	$1,054
Service Station Attendant (Total)	$174,514	151	70	169	$1,033	$2,493
(Center)	$148,750	121	58	141	$1,055	$2,565
(National)	$25,764	30	12	28	$920	$2,147
Diesel Mechanic (Center)	$48,213	28	17	37	$1,303	$2,836

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
Heavy Equipment Repair (Total)	$452,848	102	53	136	$3,330	$8,544
(Center)	$248,353	75	30	100	$2,484	$8,278
(National)	$204,495	27	23	36	$5,680	$8,891
07. CONSTRUCTION TRADES:						
Carpenter, Construction (Total)	$6,957,039	2121	1118	2646	$2,629	$6,223
(Center)	$819,882	693	299	903	$907	$2,742
(National)	$6,137,157	1428	819	1743	$3,521	$7,493
Electrician (Total)	$872,964	772	399	941	$928	$2,188
(Center)	$490,074	623	298	735	$666	$1,644
(National)	$382,890	149	101	206	$1,859	$3,791
Cement Mason (Total)	$1,722,550	585	314	716	$2,406	$5,486
(Center)	$66,408	52	22	56	$1,185	$3,018
(CCC)	$142,029	55	36	58	$2,449	$3,945
(National)	$1,514,113	478	256	602	$2,515	$5,914

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
Brick and Stone Mason (Total)	$2,529,234	1311	617	1433	$1,765	$4,099
(Center)	$471,764	639	257	617	$764	$1,835
(CCC)	$99,678	45	28	57	$1,748	$3,559
(National)	$1,957,792	627	332	759	$2,579	$5,897
Painter (Total)	$2,063,861	982	497	971	$2,126	$4,153
(Center)	$237,446	431	184	306	$775	$1,290
(National)	$1,826,415	551	313	665	$2,746	$5,835
Heavy Equipment Oper. (Total)	$1,880,167	384	219	425	$4,424	$8,585
(Center)	$667,119	227	112	233	$2,863	$5,956
(National)	$1,213,048	157	107	192	$6,318	$11,337
Plumber (Total)	$842,273	486	265	617	$1,365	$3,178
(Center)	$337,268	277	139	352	$958	$2,426
(National)	$505,005	209	126	265	$1,906	$4,008
Plasterer (National)	$1,115,389	290	161	395	$2,824	$6,928
Tilesetter (National)	$220,944	58	35	82	$2,694	$6,313
Construction Laborer (CCC)	$285,659	93	52	87	$3,283	$5,493

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
Welder, Spot (Total)	$664,927	651	266	699	$951	$2,500
(Center)	$539,117	601	238	654	$824	$2,265
(CCC)	$125,810	50	28	45	$2,796	$4,493
Floor Layer (Center/ National)	$67,329	34	18	46	$1,464	$3,740
Insulation (Center)	$19,490	25	13	40	$487	$1,499
08. ELECTRICIAL/APPLIANCE REPAIR:						
Air Conditioning/ Refrigeration Mechanic (Center)	$211,670	245	113	214	$989	$1,873
Electrical Appliance Repairman (Center)	$83,787	103	51	129	$650	$1,643
Radio and TV Repairman (Center)	$51,403	47	20	83	$619	$2,570
Electrician, Helper (Center)	$63,787	62	26	89	$717	$2,453
Solar Installer (National)	$188,459	83	60	94	$2,005	$3,140
Telecommunications (National)	$59,787	56	27	60	$996	$2,214

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
09. INDUSTRIAL PRODUCTION:						
Machine Operator (Center)	$109,551	82	64	124	$883	$1,711
Combination Welder (Total)	$3,910,840	2854	1470	2998	$1,304	$2,660
(Center)	$2,198,219	1880	944	2242	$980	$2,329
(CCC)	$1,631,334	930	502	700	$2,330	$3,250
(National)	$81,287	44	24	56	$1,451	$3,386
Sheet Metal Worker (Center)	$30,068	26	16	43	699	$1,879
Furniture Upholsterer (Center)	$74,527	66	36	90	$828	$2,070
Electronics Assembler (Center)	$380,744	631	341	535	$711	$1,116
Offset Printer (Center)	$328,693	213	128	245	$1,341	$2,567
Welder, Gas Metal Arc (Center)	$37,798	60	37	38	$995	$1,022
Machine Operator, Single -- Lathe (Center)	$61,299	45	26	60	$1,022	$2,358
Machinist (Center)	$116,257	87	50	107	$1,086	$2,325

Table IV-C-1

National Vocational Costs by Training Occupation

OCCUPATION	Vocational Costs	Number Trained (90+ Days)	Number Job Placed	Number Training Years	Cost Per Training Year	Cost Per Job Placed
10. TRANSPORTATION:						
Warehouseman, Hand (Center)	$104,954	180	105	145	$724	$1,000
Forklift Operator (Center)	$20,945	27	18	25	$837	$1,163
Deckhand (National)	$130,960	34	28	38	$3,446	$4,677
11. HEALTH OCCUPATIONS:						
Nurse's Assist.(Center)	$1,918,269	3067	1165	2921	$656	$1,646
Dental Assistant (Center)	$101,794	87	52	94	$1,082	$1,957
Licensed Practical Nurse (Center)	$203,152	76	41	112	$1,813	$4,954
Medical Laboratory Asst. (Center/Nat.'l)	$24,687	27	5	34	$726	$4,937
Hospital Dietician Aide (Center)	$25,295	39	16	34	$744	$1,581
Medical Assistant (Center)	$143,197	100	41	147	$974	$3,492

Table IV D-1

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PROJECT REPORT

RELATIVE EFFECTIVENESS OF JOB CORPS VOCATIONAL TRAINING BY OCCUPATIONAL GROUPINGS

March 1983

Report Prepared for: Aurora Associates, Inc.
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RELATIVE EFFECTIVENESS OF JOB CORPS VOCATIONAL TRAINING BY OCCUPATIONAL GROUPS

The purpose of the tabulations presented in this report is to assist the Department of Labor (DOL) in its review of Job Corps vocational offerings. In assessing prospectively which occupational areas of Job Corps vacational training have the greatest potential for improving the earnings of Corpsmembers,[1/] it is obviously useful to estimate retrospectively what the earnings outcomes for Corpsmembers have been from recent Job Corps vocational offerings. In this report we develop occupational groupings for the Job Corps vocational skills training offered in 1977, estimate the annual impact on Corpsmembers earnings by occupational groupings for a four-and-one-half year period after Corpsmembers left the program, and estimate Corpsmembers assessment of the vocational skills training they received from Job Corps.

The estimates provided in this report were computed from a comprehensive data base developed to conduct an evaluation of the economic impact of the residential Job Corps program, overall, on participants.[2/] The first detail personal interviews were conducted in the spring of 1977 with a sample of Corpsmembers than participating in the program and with a comparable group of disadvantaged youths who had not attempted to enroll in

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[1/] The term Corpsmembers is used in this report to refer to participants or former participants in Job Corps.

[2/] For more information on the overall evaluation and the resulting data base, see Charles D. Mallar et al., Evaluation of the Economic Impact of the Job Corps Program: Third Follow-up Report, Princeton, N.J.: Mathematica Policy Research, Inc., September 1982.

Job Corps.[1/] At periods 9, 24, and 54 months after the baseline survey, reinterviews were conducted with all of the youths in the comparison group and with Corpsmembers who had been out of the program for a sufficient length of time to provide the needed postprogram information.

The baseline survey obtained detailed information on the demographic characteristics of the youths, their socio-economic backgrounds, their assessment of the Job Corps program, and their work histories and related activities beginning 6 months before the Corpsmembers enrolled in the program and continuing up to the date of the interview, which, on average, representerd approximately 6 months of program experience. The three follow-up surveys continued to collect detailed information on work histories and related activities during the postprogram period after Corpsmembers had been out of the program from 42 to 54 months altogether. Altogether, the data base contains baseline and some follow-up information on approximately 5,200 disadvantaged youths--3,950 Corpsmembers and 1,350 comparison youths.

On average, from the information obtained in the baseline and follow-up surveys, Job Corps was found to achieve some success in attaining its primary objective of improving the economic prospects of Corpsmembers. During the postprogram observation period, the Job Corps program, overall, was found: (1) to increase earnings of former participants by just over

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[1/] The term disadvantaged is used in this report to refer to the set of youths who have employability problems caused by their socio-economic background. Thus, it embodies several factors related to age, educational level, income status, race-ethnicity, employment history, previous social behavior, etc., that limit the ability of young men and women to obtain and hold productive jobs.

$655 per year (over a 15% increase in earnings), (2) to significantly reduce the welfare dependence of Corpsmembers, and (3) to provide economic benefits to society that exceed the costs to society of investing in Job Corps.

For this report we computed estimates of the earnings gains separately for occupational areas of the vocational skills training that Corpsmembers received in 1977. However, even though these estimates were computed from a very comprehensive data base, they are potentially inaccurate for at least two reasons. First, the data base was designed to study the effectiveness of the overall Job Corps program and not its separate components. As a consequence, for some occupational offerings we have extremely few observations, and we do not have variables available that explain very well why different Corpsmembers choose or are chosen to receive different vocational skills training in the occupational areas.

Second, even if the separate vocational offerings had been an emphasis of our study, the estimates would still be unreliable without a large experimental design, including random assignments to vocational offerings. Corspmembers choose and are chosen into different vocational offerings for reasons that are inherently unobservable and correlated with subsequent earnings outcomes (e.g., motivation and native ability). It is extremely unlikely, even with the best of data, that a statistical model could adequately control for these "selection biases". Therefore, an experimental design with random assignments to vocational offerings is needed to obtain reliable estimates of the impact of different vocational offerings on Corpsmembers earnings.

With the above qualifications firmly in mind, we proceed to the tables. First, we present tables showing the distribution of Job Corps

vocational offerings in 1977, then tables of estimates of Corpsmembers earnings outcomes for these vocational offerings, and finally, tables of Corpsmember assessments of the Job Corps program for these vocational offerings.

1. Tabulations of Occupational Offerings in 1977

We began by obtaining the most detailed and comprehensive information available for our Corpsmembers on the occupation of their vocational skills training from Job Corps. This information is the cluster/subcluster designation on occupation of training in Job Corps program records and was merged into our data base from the Job Corps "Mainstream Master File" via a match on Social Security numbers. Altogether, we obtained data on the occupation of Job Corps vocational training for 2,446 of our sampled Corpsmembers. We did not obtain information on other members of the sample group either because they had not been in Job Corps long enough to be assigned to a vocational offering or because we could not obtain a match on Social Security number (a missing number or recording error in one or the other of the files).

The appendix tables show the complete breakdown of occupational titles available on Job Corps vocational training for 1977 (see Table A.1) and frequency counts on the vocational training of our Corpsmember sample by these occupational titles (see Tables A.2 and A.3 for males and females, respectively). The relative frequencies should be (and appear to be) broadly representative of the distribution of vocational offerings for all Corpsmembers in 1977.

The frequency counts show that there are many more observations for males than females (1,755 for males compared to 691 for females) as in proportion to the distribution of all Corpsmembers in 1977 (approximately 70% males and 30% females). Also the female observations tend to be more concentrated in a few occupational titles (nurses assistant and clerk

typist). As a consequence, we had to group females into a smaller number of occupational offerings than for males.

In defining occupational groupings, we tried to preserve as much detail as possible, while having enough observations in each group to provide meaningful estimates. We tried to obtain at least 16 observations in each group,[1/] but violated that three times (meat cutter for males, spot welder for females, and health other than nurses assistant for females), in order to perserve more detail and substance to the groupings. As shown in Table 1, we obtained 26 occupational groupings for males and 15 for females.[2/] As shown in Tables 2 and 3, the largest frequencies for males are in carpenter construction, custodial maintenance, and mechanic repairer, and the female observations are heavily concentrated (as noted above) in nurses assistant and clerk typist.

[1/] For a proportionate variable with p=0.500, this would yield a standard error of 0.125 and a coefficient of variation (mean divided by standard error) of 25 percent.

[2/] Appendix Tables A.1 through A.7 show the precise derivation and distribution of these occupational groupings.

TABLE 1

OCCUPATIONAL GROUPINGS USED IN ESTIMATING OUTCOMES
FOR JOB CORPS VOCATIONAL TRAINING IN 1977

Males		Females	
1.	Drafting	1.	Clerk Typist
2.	Clerical and Sales	2.	Key Punch Operator
3.	Custodial Maintenance	3.	Retail Sales Clerk
4.	Nursery or Forestry Assistant	4.	Cashier/Checker
5.	Baker	5.	Clerk, Other
6.	Cook	6.	Clerical and Sales, Other
7.	Meat Cutter	7.	Cook
8.	Auto Mechanic Helper	8.	Food Service, Other
9.	Mechanic Repairer	9.	Spot Welder
10.	Auto Body Repair	10.	Construction, Other
11.	Carpenter Construction	11.	Offset Printer
12.	Electrician	12.	Industrial Production, Other
13.	Cement Mason	13.	Nurses Assistant
14.	Brick and Stone Mason	14.	Health, Other
15.	Painter-Paperhanger	15.	Other
16.	Heavy Equipment Operator		
17.	Plumber		
18.	Plasterer		
19.	Construction Laborer		
20.	Spot Welder		
21.	Construction, Other		
22.	Electrical/Appliance Repair		
23.	Combination Welder		
24.	Offset Printer		
25.	Industrial Production, Other		
26.	Other		

TABLE 2

FREQUENCY DISTRIBUTION OF OBSERVATIONS
BY OCCUPATIONAL GROUPINGS USED IN ESTIMATES FOR MALE CORPSMEMBERS

	Occupational Grouping	Frequency Count	Percent of Sample
1.	Drafting	24	1.37%
2.	Clerical and Sales	49	2.79
3.	Custodial Maintenance	188	10.71
4.	Nursery or Forestry Assistant	33	1.88
5.	Baker	17	0.97
6.	Cook	126	7.18
7.	Meat Cutter	11	0.63
8.	Auto Mechanic Helper	44	2.51
9.	Mechanic Repairer	161	9.17
10.	Auto Body Repair	76	4.33
11.	Carpenter Construction	202	11.51
12.	Electrician	39	2.22
13.	Cement Mason	37	2.11
14.	Brick and Stone Mason	108	6.15
15.	Painter-Paperhanger	87	4.96
16.	Heavy Equipment Operator	73	4.16
17.	Plumber	18	1.03
18.	Plasterer	21	1.20
19.	Construction Laborer	31	1.77
20.	Spot Welder	30	1.71
21.	Construction, Other	45	2.56
22.	Electrical/Appliance Repair	43	2.45
23.	Combination Welder	104	5.93
24.	Offset Printer	18	1.03
25.	Industrial Production, Other	140	7.98
26.	Other	30	1.71
	TOTAL	1,755	100.00%

TABLE 3

FREQUENCY DISTRIBUTION OF OBSERVATIONS
BY OCCUPATIONAL GROUPINGS USED IN ESTIMATES FOR FEMALE CORPSMEMBERS

	Occupational Grouping	Frequency Count	Percent of Sample
1	Clerk Typist	138	19.97%
2.	Key Punch Operator	42	6.08
3.	Retail Sales Clerk	20	2.89
4.	Cashier/Checker	19	2.75
5.	Clerk, Other	47	6.80
6.	Clerical and Sales, Other	50	7.24
7.	Cook	24	3.47
8.	Food Service, Other	26	3.76
9.	Spot Welder	13	1.88
10.	Construction, Other	20	2.89
11.	Offset Printer	18	2.60
12.	Industrial Production, Other	25	3.62
13.	Nurses Assistant	180	26.05
14.	Health, Other	14	2.03
15.	Other	55	7.96
	TOTAL	691	100.00%

2. Estimates of Corpsmembers Outcomes for Employment and Earnings[1/]

Tables 4 and 5 show the estimated increases in annual earnings per Corpsmembers by occupational groupings, and Table 6 summarizes which occupations of vocational offerings are estimated to be associated with large increases in annual earnings. As indicated previously, however, these findings must be interpreted with extreme caution, because we cannot be sure how much of this association is an impact of differences among the offerings and how much of it is attributable to underlying differences among the Corpsmembers enrolled in these offerings. In fact, the negative estimates are an indicator of unreliability, unless it is plausible that some Job Corps vocational offerings could have a negative impact on enrollees future earnings. The adjusted estimates partially mitigate the problem by using a regression model to contrcl for observed differences among Corpsmembers, so that the estimated differentials across vocational offerings are more nearly applicable to groups with similar enrollees in terms of the observed characteristics. Unfortunately, however, many important characteristics of Corpsmembers could not be observed.[2/]

[1/] Estimated differentials among occupational groupings are shown relative to the estimated overall gain in annual earnings of $655 per Corpsmember (see Mallar et al., op. cit.).

[2/] Quarterly observations on individual Corpsmembers were pooled over the time periods in order to increase the precision of the regression adjustments that could be estimated. For mo e details and documentation of the regression procedures used, see Mallar et al., op. cit.

TABLE 4

ESTIMATES OF INCREASES IN ANNUAL EARNINGS PER CORPSMEMBER:
BY OCCUPATIONAL GROUPINGS FOR MALES [a]
(Based on an Average Gain of $655)

	Occupational Grouping	Unadjusted Sample Mean Estimates	Estimates Adjusted For Differences in Personal Characteristics [b]
1.	Drafting	$ 1,172	$ 1,003
2.	Clerical and Sales	2,119	1,251
3.	Custodial and Maintenance	32	235
4.	Nursery or Forestry	- 689	- 1,027
5.	Baker	- 476	249
6	Cook	346	241
7.	Meat Cutter	- 151	360
8.	Auto Mechanic Helper	644	903
9.	Mechanic Repairer	413	733
10.	Auto Body Repair	156	160
11.	Carpenter Construction	1,001	695
12.	Electrician	1,070	1,150
13.	Cement Mason	1,899	1,379
14.	Brick and Stone Mason	- 292	260
15.	Painter-Paperhanger	- 592	- 651
16.	Heavy Equipment Operator	2,618	1,772
17.	Plumber	- 482	- 172
18.	Plasterer	317	- 362
19.	Construction Laborer	- 270	471
20.	Spot Welder	209	348
21.	Construction, Other	1,434	1,738
22.	Electrical/Appliance Repair	145	533
23.	Combination Welder	1,483	1,428
24.	Offset Printer	- 1,496	- 2,036
25.	Industrial Production, Other	1,697	1,822
26.	Other	905	661

[a] The estimates were computed from complete data on 1,250 Corpsmembers for an average of 11.98 quarters; that is, 14,975 quarterly observations.

[b] These estimates control for differences among Corpsmembers in age (five variables); pre-enrollment education (three variables); race/ethnicity (four variables); pre-enrollment health (one variable); seasonality (three variables) and time trends (one variable); and pre-enrollment experiences with employment (two variables), welfare (one variable), illegal activities (one variable), and drug use (two variables).

TABLE 5

ESTIMATES OF INCREASES IN ANNUAL EARNINGS PER CORPSMEMBER:
BY OCCUPATIONAL GROUPINGS FOR FEMALES [a]
(Based on an Average Gain of $655)

	Occupational Grouping	Unadjusted Sample Mean Estimates	Estimates Adjusted For Differences in Personal Characteristics [b]
1	Clerk Typist	$ 347	$ 495
2.	Key Punch Operator	1,631	1,660
3.	Retail Sales Clerk	1,216	1,470
4.	Cashier/Checker	591	1,661
5.	Clerk, Other	1,470	991
6.	Clerical and Sales, Other	2,935	2,496
7.	Cook	- 679	- 66
8.	Food Service, Other	341	727
9.	Spot Welder	- 897	- 694
10.	Construction, Other	2,307	2,084
11.	Offset Printer	- 348	- 480
12.	Industrial Production, Other	2,081	1,581
13.	Nurses Assistant	181	189
14.	Health, Other	- 634	- 532
15.	Other	- 549	- 462

[a] The estimates were computed from complete data on 506 Corpsmembers for an average of 12.65 quarters; that is, 6,401 quarterly observations.

[b] These estimates control for differences among Corpsmembers in age (five variables); pre-enrollment education (three variables); race/ethnicity (four variables); pre-enrollment health (one variable); seasonality (three variables) and time trends (one variable); and pre-enrollment experiences with employment (two variables), welfare (one variable), illegal activities (one variable), and drug use (two variables).

TABLE 6

OCCUPATIONAL GROUPINGS OF JOB CORPS VOCATIONAL TRAINING
WITH LARGE ESTIMATED INCREASE IN EARNINGS
(In Order Beginning with Largest) [a]

	Males		Females
1.	Industrial Production, Other	1.	Clerical and Sales, Other
2.	Heavy Equipment Operator	2.	Construction, Other
3.	Construction, Other	3.	Key Punch Operator
4.	Combination Welder	4.	Industrial Production, Other
5.	Cement Mason	5.	Retail Sales Clerk
6.	Clerical and Sales	6.	Clerk, Other
7.	Electrician		
8.	Drafting		
9.	Auto Mechanic Helper		

[a] Based on the estimates adjusted for differences in personal characteristics, presented in Tables 4 and 5.

3. Estimates of Corpsmember Assessment[1/]

Tables 7 and 8 show estimates, by occupational groupings of training, of whether Corpsmembers report the vocational training helped them in getting specific jobs. Similarly, Tables 9 and 10 show estimates, by occupational groupings of training, of whether Corpsmembers report they were satisfied with their Job Corps program. While these estimates have all the problems associated with rating scales, in addition to the "selection bias" problems noted above, they do provide corroborative evidence for some of the vocational offerings. Among female Corpsmembers, for example, the key punch operator offerings and clerk offerings, other than clerk typist, are highly rated in addition to being associated with large increases in earnings. Similarly among male Corpsmembers, these participant ratings provide confirmatory support for the combination welder offerings and cement mason offerings.

[1/] Only the unadjusted sample mean estimates are presented in this section, because the regression models did not explain an appreciable amount of variance and yielded the same basic results as shown.

TABLE 7

PERCENT OF MALE CORPSMEMBERS REPORTING THE VOCATIONAL TRAINING HELPED THEM IN GETTING SPECIFIC JOBS: BY OCCUPATIONAL GROUPINGS OF TRAINING

Occupational Grouping	Report Some Aspect of Program Helpful	Report Occupational Skills Learned Especially Helpful	Report Work Experience Especially Helpful
1. Drafting	62%	27%	21%
2. Clerical and Sales	57	27	23
3. Custodial Maintenance	58	27	29
4. Nursery or Forestry Assistant	58	50	46
5. Baker	49	33	41
6. Cook	59	33	32
7. Meat Cutter	62	25	50
8. Auto Mechanic Helper	72	42	38
9. Mechanic Repairer	64	34	31
10. Auto Body Repair	61	33	39
11. Carpenter Construction	66	50	47
12. Electrician	74	50	39
13. Cement Mason	79	49	45
14. Brick and Stone Mason	56	29	27
15. Painter-Paperhanger	65	48	43
16. Heavy Equipment Operator	52	32	27
17. Plumber	51	25	32
18. Plasterer	50	25	25
19. Construction Laborer	44	15	15
20. Spot Welder	61	42	38
21. Construction, Other	52	24	17
22. Electrical/Appliance Repair	55	17	17
23. Combination Welder	56	37	36
24. Offset Printer	57	25	25
25. Industrial Production, Other	59	33	30
26. Other	53	37	21
TOTAL	60%	35%	33%

TABLE 8

PERCENT OF FEMALE CORPSMEMBERS REPORTING THE VOCATIONAL TRAINING HELPED THEM IN GETTING SPECIFIC JOBS: BY OCCUPATIONAL GROUPINGS OF TRAINING

Occupational Grouping	Report Some Aspect of Program Helpful	Report Occupational Skills Learned Especially Helpful	Report Work Experience Especially Helpful
1. Clerk Typist	47 %	29 %	25 %
2. Key Punch Operator	63	47	33
3. Retail Sales Clerk	38	25	19
4. Cashier/Checker	71	53	36
5. Clerk, Other	68	42	35
6. Clerical and Sales, Other	49	24	14
7. Cook	50	31	25
8. Food Service, Other	52	26	21
9. Spot Welder	10	10	10
10. Construction, Other	35	29	29
11. Offset Printer	42	17	17
12. Industrial Production, Other	40	33	13
13. Nurses Assistant	58	44	40
14. Health, Other	65	39	26
15. Other	57	18	18
TOTAL	53 %	35 %	29 %

TABLE 9

PERCENT OF MALE CORPSMEMBERS REPORTING SATISFACTION WITH PROGRAM:
BY OCCUPATIONAL GROUPING OF VOCATIONAL TRAINING

Occupational Grouping	Report "Satisfied" Overall with Job Corps	Report "Good" to Types of Training Offered	Report "Good" or "OK" to Types of Training Offered	Report "Good" to Actual Training Received	Report "Good" or "OK" to Actual Training Received
1. Drafting	80%	72%	92%	80%	96%
2. Clerical and Sales	75	60	90	65	100
3. Custodial Maintenance	68	50	84	48	90
4. Nursery or Forestry Assistant	70	64	94	61	94
5. Baker	76	53	82	53	100
6. Cook	66	48	83	57	88
7. Meat Cutter	82	82	100	73	91
8. Auto Mechanic Helper	59	48	89	52	93
9. Mechanic Repairer	63	54	94	61	97
10. Auto Body Repair	69	61	91	68	95
11. Carpenter Construction	79	66	96	73	96
12. Electrician	79	45	87	55	95
13. Cement Mason	65	57	89	73	97
14. Brick and Stone Mason	69	67	94	73	95
15. Painter-Paperhanger	70	59	92	66	97
16. Heavy Equipment Operator	84	67	96	66	93
17. Plumber	50	56	94	56	94
18. Plasterer	71	67	86	71	100
19. Construction Laborer	45	55	81	61	87
20. Spot Welder	80	57	100	70	97
21. Construction, Other	66	36	80	52	82
22. Electrical/Appliance Repair	62	55	90	52	90
23. Combination Welder	81	70	94	76	100
24. Offset Printer	63	32	95	53	95
25. Industrial Production, Other	67	60	89	64	94
26. Other	63	60	93	77	93
TOTAL	70%	58%	91%	64%	94 %

TABLE 10

PERCENT OF FEMALE CORPSMEMBERS REPORTING SATISFACTION WITH PROGRAM
BY OCCUPATIONAL GROUPING OF VOCATIONAL TRAINING

Occupational Grouping	Report "Satisfied" Overall with Job Corps	Report "Good" to Types of Training Offered	Report "Good" or "OK" to Types of Training Offered	Report "Good" to Actual Training Received	Report "Good" or "OK" to Actual Training Received
1. Clerk Typist	77%	51%	85%	57%	96%
2. Key Punch Operator	83	57	93	69	95
3. Retail Sales Clerk	75	50	100	75	95
4. Cashier/Checker	47	37	74	53	95
5. Clerk, Other	76	46	93	67	100
6. Clerical and Sales, Other	71	46	85	48	92
7. Cook	73	45	95	50	95
8. Food Service, Other	60	32	68	28	72
9. Spot Welder	69	46	77	77	85
10. Construction, Other	65	50	75	55	95
11. Offset Printer	71	35	94	71	94
12. Industrial Production, Other	80	48	88	56	84
13. Nurses Assistant	74	54	89	62	97
14. Health, Other	64	71	86	71	100
15. Other	77	50	83	62	94
TOTAL	73%	50%	87%	59%	94%

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TABLE A.1

JOB CORPS CODING SYSTEM FOR DESIGNATING
OCCUPATION OF VOCATIONAL TRAINING IN 1977

Job Corps Cluster Designation	Job Corps Subcluster Designation	Job Corps Occupational Title	Approximate Six-Digit D.O.T. Code
1. Cluster Number 01 -- Sub Professional Cluster			
01	A	Draftsman	017.281
01	B	Commercial/Graphic Artist	142.081
01	C	Cosmetologist	332.274
01	D	Engineering Aide/Rodman-Chainman	018.687
01	E	Clothes Designer	142.081
01	F	Executive Housekeeper	187.168
01	G	Fashion Artist	141.081
01	H	Floral Designer (Entry Level)	142.081
01	X	Other	N.A. [a]
2. Cluster Number 02 -- Clerical and Sales Cluster			
02	A	Clerk Typist	209.388
02	B	Not Used	N.A.
02	C	Duplicating Machine Operator	207.884
02	D	Key Punch Operator	213.582
02	E	Stock Clerk	223.387
02	F	Retail Sales Clerk	290.478
02	G	Accounting Clerk	219.488
02	H	Secretary	201.368
02	I	Bookkeeper	210.388
02	J	Calculating Machine Operator	210.388
02	K	Mail Clerk	231.588
02	L	Cashier/Checker	299.468
02	M	Clerk, General	207.388
02	N	Credit Clerk	249.368
02	O	Medical Secretary	201.368
02	P	Receptionist	237.368
02	Q	Showcase Trimmer/Display Man	298.081
02	R	Stenographer	202.388
02	S	Telegraphic-Typewriter Op./ TWX Operator	203.588
02	T	Telephone Operator	235.862
02	U	Transcribing Machine Operator	208.588
02	V	Vari-Typist	203.582
02	W	Ward Clerk	219.388
02	X	Other	N.A.

Table A.1 (continued)

Job Corps Cluster Designation	Job Corps Subcluster Designation	Job Corps Occupational Title	Approximate Six-Digit D.O.T. Code
3. Cluster Number 03 -- Service Occupations Cluster			
03	A	Laundry Worker; Machine Presser	363.782
03	B	Custodial Maintenance	899.381
03	C	Security Guard	372.868
03	D	Barber	330.371
03	E	Library Assistant	249.368
03	F	Maid, General	306.878
03	G	Manicurist	331.878
03	H	Patrolman/Policeman	375.268
03	I	Policewoman	375.268
03	J	Teacher Aide	099.368
03	K	Teacher, Nursery School	359.878
03	L	Wig Dresser	332.381
03	X	Other	N.A.
4. Cluster Number 04 -- Forestry, Farming and Gardening Cluster			
04	A	Not Used	N.A.
04	B	Nursery Worker; Landscape Assistant, Groundskeeper	406.887
04	C	Forestry and Conservation Worker	441.384
04	D	Farm Equipment Operator	409.883
04	E	Livestock Worker	466.887
04	X	Other	N.A.
5. Cluster Number 05 -- Food Service Cluster			
05	A	Waiter or Waitress	311.878
05	B	Cook	315.381
05	C	Baker	526.781
05	D	Meat Cutter	316.884
05	E	Baker, Helper	526.886
05	F	Baker, Second	313.381
05	G	Cook, Short Order	314.381
05	H	Counter Girl/Man	311.878
05	I	Pantry Man/Salad Man or Girl	317.884
05	X	Other	N.A.

Table A.1 (continued)

Job Corps Cluster Designation	Job Corps Subcluster Designation	Job Corps Occupational Title	Approximate Six-Digit D.O.T. Code
6. Cluster Number 06 -- Automotive and Machinery Repair Cluster			
06	A	Auto Mechanic Helper	620.884
06	B	Automobile Service Repairman (Mechanic)	620.381
06	C	Farm Truck Heavy Equipment Repairman	624.281
06	D	Small Gas Engine Repairman	625.181
06	E	Auto Body Repairman	807.381
06	F	Not Used	N.A
06	G	Automobile-Radiator Man/ Radiator Repairman	620.381
06	H	Service Station Attendant	915.878
06	I	Automobile Upholsterer	780.381
06	J	Boat Patcher	807.884
06	K	General Machinery Repairman	806.887
06	L	Brakeman Automobile/ Brake Repairman	620.281
06	M	Marine Engine Repairman	623.281
06	N	Diesel Mechanic	625.281
06	O	Farm Equipment Mechanic	624.281
06	P	Front End Man	620.281
06	Q	Motor Boat Mechanic	623.281
06	R	Repairman, Heavy/ Heavy Equipment Repair	620.381
06	S	Transmission Mechanic	620.281
06	X	Other	N.A.
7. Cluster Number 07 -- Construction Trades Cluster			
07	A	Carpenter Construction	860.381
07	B	Electrician	824.281
07	C	Cement Mason	844.884
07	D	Brick and Stone Mason	861.381
07	E	Painter-Paperhanger	840.781
07	F	Heavy Equipment Operator	859.883
07	G	Furnace Installer & Repairman, Hot Oil/Furnace Repairman	862.281

Table A.1 (continued)

Job Corps Cluster Designation	Job Corps Subcluster Designation	Job Corps Occupational Title	Approximate Six-Digit D.O.T. Code
Construction Trades Cluster (continued)			
07	H	Plumber	862.381
07	I	Plasterer	842.781
07	J	Tilesetter	861.781
07	K	Construction Laborer	869.884
07	L	Welder, Spot	810.782
07	X	Other	N.A.
8. Cluster Number 08 -- Electrical/Appliance Repair Cluster			
08	A	Air Conditioning/Refrigeration Mechanic	637.281
08	B	Air Conditioning Installer	821.884
08	C	Electrical Appliance Repairman	723.381
08	D	Radio & TV Repairman	720.281
08	E	Office Machine Repairman	633.281
08	F	Not Used	N.A.
08	G	Electrician Helper	829.887
08	H	Gas Appliance Repairman	637.281
08	X	Other	N.A.
9. Cluster Number 09 -- Industrial Production Cluster			
09	A	Machine Operator/Machine Set-up Man	609.883
09	B	Combination Welder	812.884
09	C	Sheet Metal Worker	804.281
09	D	Furniture Upholsterer	780.381
09	E	Electronics Assembler	726.781
09	F	Offset Printer	651.782
09	G	Bindery Worker	643.885
09	H	General Printing Trade Worker	979.886
09	I	Chassis Assembler	729.884
09	J	Not Used	N.A.
09	K	Factory Worker/Assembler-All Types	706.887
09	L	Not Used	N.A.
09	M	Cabinet Maker	660.280
09	N	Not Used	N.A.
09	O	Tailor Apprentice Custom/Tailor	785.261
09	P	Tester, Systems/Electronic Tester	729.381
09	X	Other	N.A.

Table A.1 (continued)

Job Corps Cluster Designation	Job Corps Subcluster Designation	Job Corps Occupational Title	Approximate Six-Digit D.O.T. Code
10. Cluster Number 10 -- Transportation Cluster			
10	A	Truck Driver, Heavy/Light	906.883
10	B	Not Used	N.A.
10	C	Forklift Operator	922.883
10	D	Bus Driver	913.463
10	E	Dragline Operator	859.883
10	F	Power-Shovel Operator	850.883
10	G	Tractor Trailer/Truck Driver	904.883
10	X	Other	N.A.
11. Cluster Number 11 -- Health Occupations Cluster			
11	A	Nurses Assistant	355.878
11	B	Dental Assistant	079.378
11	C	Licensed Practical Nurse	079.378
11	D	Veterinary Assistant	356.878
11	E	Attendant, Physical Therapy/ Physical Therapy Aid	355.878
11	F	Electro-Cardiograph Technician/EKG Technician	078.368
11	G	Home Attendant/Home Rehabilitation Aid	354.878
11	H	Inhalation Therapist	079.368
11	I	Medical Laboratory Assistant/ Laboratory Techniciam Assist.	078.381
11	J	Nurse, Professional	075.378
11	K	Psychiatric Aid	355.878
11	L	Radiologic Technologist/X-Ray Technician Assistant	078.368
11	M	Tray-Line Worker/Hosptial Dietitian Aide	355.878
11	X	Other	N.A.
12. Cluster Number 12 -- Unassigned			
12	A	N.A. (Orientation)	N.A.
12	B	N.A. (Basic Education)	N.A.
12	C	N.A. (Pre-Vocational	N.A.

a/ N.A. means Not Applicable.

TABLE A.2

COUNTS OF VOCATIONAL OFFERINGS BY JOB CORPS DESIGNATION OF OCCUPATION:
1977 SAMPLE OF MALE CORPSMEMBERS
(Frequency As a Percent of Total Observations, n=1770, Shown in Parentheses)

Subcluster Code	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10	Cluster 11	Cluster 12	All Clusters
Missing	1 (0.06)	0	C	0	3 (0.17)	2 (0.11)	1 (0.06)	0	5 (0.28)	0	0	0	12 (0.68)
A	21 (1.19)	16 (0.90)	0	0	0	44 (2.49)	202 (11.41)	35 (1.98)	10 (0.56)	3 (0.17)	12 (0.68)	4 (0.23)	347 (19.60)
B	0	0	188 (10.62)	22 (1.24)	109 (6.16)	74 (4.18)	39 (2.20)	0	104 (5.88)	8 (0.45)	0	6 (0.34)	550 (31.07)
C	0	0	0	11 (0.62)	17 (0.96)	4 (0.23)	37 (2.09)	8 (0.45)	9 (0.51)	4 (0.23)	0	5 (0.28)	95 (5.37)
D	0	2 (0.11)	0	0	11 (0.62)	2 (0.11)	108 (6.10)	0	12 (0.68)	0	0	0	135 (7.63)
E	0	7 (0.40)	0	0	0	76 (4.29)	87 (4.92)	0	4 (0.23)	0	1 (0.06)	0	175 (9.89)
F	0	1 (0.06)	0	0	0	6 (0.34)	73 (4.12)	0	18 (1.02)	0	0	0	98 (5.54)
G	0	4 (0.23)	0	0	2 (0.11)	0	0	0	0	0	0	0	6 (0.34)
H	0	0	0	0	0	0	18 (1.02)	0	0	0	0	0	18 (1.02)
I	0	0	0	0	0	0	21 (1.19)	0	0	0	1 (0.06)	0	22 (1.24)
J	0	0	0	0	0	0	0	0	0	0	0	0	0
K	0	0	0	0	0	0	31 (1.75)	0	0	0	1 (0.06)	0	32 (1.81)
L	0	9 (0.51)	0	0	0	0	30 (1.69)	0	0	0	0	0	39 (2.20)
M	0	1 (0.06)	0	0	0	0	0	0	0	0	0	0	1 (0.06)

A.2 (continued)

Subcluster Code	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10	Cluster 11	Cluster 12	All Clusters
N	0	0	0	0	0	4 (0.23)	0	0	0	0	0	0	4 (0.23)
O	0	0	0	0	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	8 (0.45)	1 (0.06)	0	0	0	0	0	9 (0.51)
T	0	4 (0.23)	0	0	0	0	0	0	0	0	0	0	4 (0.23)
V	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0
X	2 (0.11)	5 (0.28)	0	0	12 (0.68)	61 (3.45)	43 (2.43)	0	100 (5.65)	0	0	0	223 (12.60)
All Sub-Clusters	24 (1.36)	49 (2.77)	188 (10.62)	33 (1.86)	154 (8.70)	281 (15.88)	691 (39.04)	43 (2.43)	262 (14.80)	15 (0.85)	15 (0.85)	15 (0.85)	1770 (100.00)

TABLE A.3

COUNTS OF VOCATIONAL OFFERINGS BY JOB CORPS DESIGNATION OF OCCUPATION:
1977 SAMPLE OF FEMALE CORPSMEMBERS
(Frequency As a Percent of Total Observations, n=696, Shown in Parentheses)

Subcluster Code	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10	Cluster 11	Cluster 12	All Clusters
Missing	3 (0.43)	3 (0.43)	0	0	0	1 (0.14)	0	0	0	0	1 (0.14)	0	8 (1.15)
A	4 (0.57)	128 (18.39)	0	0	0	0	2 (0.29)	1 (0.14)	1 (0.14)	1 (0.14)	178 (25.57)	4 (0.57)	319 (45.83)
B	0	1 (0.14)	6 (0.86)	1 (0.14)	24 (3.45)	0	1 (0.14)	0	7 (1.01)	10 (1.44)	1 (0.14)	1 (0.14)	52 (7.47)
C	4 (0.57)	0	0	1 (0.14)	7 (1.01)	0	0	4 (0.57)	0	0	1 (0.14)	0	17 (2.44)
D	0	42 (6.03)	0	0	1 (0.14)	0	2 (0.29)	0	1 (0.14)	0	0	0	46 (6.61)
E	0	4 (0.57)	0	0	0	2 (0.29)	6 (0.86)	0	10 (1.44)	0	0	0	22 (3.16)
F	0	20 (2.87)	0	0	0	2 (0.29)	0	0	18 (2.59)	0	0	0	40 (5.75)
G	1 (0.14)	10 (1.44)	0	0	0	0	0	0	0	0	0	0	11 (1.58)
H	0	4 (0.57)	0	0	0	0	0	0	0	0	0	0	4 (0.57)
I	0	4 (0.57)	0	0	0	0	0	0	0	0	0	0	4 (0.57)
J	0	0	3 (0.43)	0	0	0	0	0	0	0	0	0	3 (0.43)
K	0	0	6 (0.86)	0	0	0	0	0	0	0	0	0	6 (0.86)
L	0	19 (2.73)	0	0	0	0	13 (1.87)	0	0	0	0	0	32 (4.60)
M	0	17 (2.44)	0	0	0	0	0	0	0	0	10 (1.44)	0	27 (3.88)

A.3 (continued)

Subcluster Code	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10	Cluster 11	Cluster 12	All Clusters
N	0	6 (0.86)	0	0	0	1 (0.14)	0	0	0	0	0	0	7 (1.01)
O	0	1 (0.14)	0	0	0	0	0	0	0	0	0	0	1 (0.14)
P	0	8 (1.15)	0	0	0	0	0	0	0	0	0	0	8 (1.15)
R	0	4 (0.57)	0	0	0	0	0	0	0	0	0	0	4 (0.57)
T	0	6 (0.86)	0	0	0	0	0	0	0	0	0	0	6 (0.86)
V	0	1 (0.14)	0	0	0	0	0	0	0	0	0	0	1 (0.14)
W	0	6 (0.86)	0	0	0	0	0	0	0	0	0	0	6 (0.86)
X	3 (0.43)	32 (4.60)	0	0	18 (2.59)	1 (0.14)	9 (1.29)	0	6 (0.86)	0	3 (0.43)	0	72 (10.34)
All Sub-Clusters	15 (2.16)	316 (45.40)	15 (2.16)	2 (0.29)	50 (7.18)	7 (1.01)	33 (4.74)	5 (0.72)	43 (6.18)	11 (1.58)	194 (27.87)	5 (0.72)	696 (100.00)

TABLE A.4

DEFINITIONS OF OCCUPATIONAL GROUPINGS
USED IN ESTIMATES FOR MALE CORPSMEMBERS

Occupational Grouping	Job Corps Cluster Designation	Job Corps Subcluster Designation	Approximate Six-Digit D.O.T. Code
1. Drafting	1	A, X or missing	017.281
2. Clerical and Sales	2	all	2XX.XXX [a]
3. Custodial Maintenance	3	B	899.381
4. Nursery or Forestry Assistant	4	B or C	406.887 or 441.384
5. Baker	5	C	526.781
6. Cook	5	B, G, X or missing	315.381 or 314.381
7. Meat Cutter	5	D	316.884
8. Auto Mechanic Helper	6	A	620.884
9. Mechanic Repairer	6	B, C, D, F N, R, X or missing	620.381, 624.281 or 625.281
10. Auto Body Repair	6	E	807.381
11. Carpenter Construction	7	A	860.381
12. Electrician	7	B	824.281
13. Cement Mason	7	C	844.884
14. Brick and Stone Mason	7	D	861.381
15. Painter-Paperhanger	7	E	840.781
16. Heavy Equipment Operator	7	F	859.883
17. Plumber	7	H	862.381
18. Plasterer	7	I	842.781
19. Construction Laborer	7	K	869.884
20. Spot Welder	7	L	810.782
21. Construction, Other	7	R, X or missing	8XX.XXX
22. Electrical/Appliance Repair	8	A or C	637.281 or 723.381
23. Combination Welder	9	B	812.884
24. Offset Printer	9	F	651.782
25. Industrial Production, Other	9	A, C, D, E, X or missing	several
26. Other	10	A, B, or C	9XX.XXX
	11	A, E, I or K	355.878

[a] X indicates several possible numbers.

TABLE A.5

DEFINITIONS OF OCCUPATIONAL GROUPINGS
USED IN ESTIMATES FOR FEMALE CORPSMEMBERS

Occupational Grouping	Job Corps Cluster Designation	Job Corps Subcluster Designation	Approximate Six-Digit D.O.T. Code
1. Clerk Typist	2	A, H, O, R or V	209.388
2. Key Punch Operator	2	D	213.582
3. Retail Sales Clerk	2	F	290.478
4. Cashier/Checker	2	L	299.468
5. Clerk, Other	2	E, G, I, M N or W	2XX.XXX [a/]
6. Clerical and Sales, Other	2	B, P, T, X or missing	2XX.XXX
7. Cook	5	B	315.381
8. Food Service, Other	5	C, D or X	several
9. Spot Welder	7	L	810.782
10. Construction, Other	7	A, B, D, E or X	8XX.XXX
11. Offset Printer	9	F	651.782
12. Industrial Production, Other	9	A, B, D, E or X	several
13. Nurses Assistant	11	A, B or C	355.878
14. Health, Other	11	M, X or missing	several
15. Other	1, 3, 4, 6 8 or 10	all	several

[a/] X indicates several possible numbers.

A.12

TABLE A.6

FREQUENCY DISTRIBUTION OF OBSERVATIONS
BY OCCUPATIONAL GROUPINGS USED IN ESTIMATES FOR MALE CORPSMEMBERS

	Occupational Grouping	Frequency Count	Percent of Sample
1.	Drafting	24	1.37%
2.	Clerical and Sales	49	2.79
3.	Custodial Maintenance	188	10.71
4.	Nursery or Forestry Assistant	33	1.88
5.	Baker	17	0.97
6.	Cook	126	7.18
7.	Meat Cutter	11	0.63
8.	Auto Mechanic Helper	44	2.51
9.	Mechanic Repairer	161	9.17
10.	Auto Body Repair	76	4.33
11.	Carpenter Construction	202	11.51
12.	Electrician	39	2.22
13.	Cement Mason	37	2.11
14.	Brick and Stone Mason	108	6.15
15.	Painter-Paperhanger	87	4.96
16.	Heavy Equipment Operator	73	4.16
17.	Plumber	18	1.03
18.	Plasterer	21	1.20
19.	Construction Laborer	31	1.77
20.	Spot Welder	30	1.71
21.	Construction, Other	45	2.56
22.	Electrical/Appliance Repair	43	2.45
23.	Combination Welder	104	5.93
24.	Offset Printer	18	1.03
25.	Industrial Production, Other	140	7.98
26.	Other	30	1.71
	TOTAL	1,755	100.00%

TABLE A.7

FREQUENCY DISTRIBUTION OF OBSERVATIONS BY
BY OCCUPATIONAL GROUPINGS USED IN ESTIMATES FOR FEMALE CORPSMEMBERS

	Occupational Grouping	Frequency Count	Percent of Sample
1	Clerk Typist	138	19.97%
2.	Key Punch Operator	42	6.08
3.	Retail Sales Clerk	20	2.89
4.	Cashier/Checker	19	2.75
5.	Clerk, Other	47	6.80
6.	Clerical and Sales, Other	50	7.24
7.	Cook	24	3.47
8.	Food Service, Other	26	3.76
9.	Spot Welder	13	1.88
10.	Construction, Other	20	2.89
11.	Offset Printer	18	2.60
12.	Industrial Production, Other	25	3.62
13.	Nurses Assistant	180	26.05
14.	Health, Other	14	2.03
15.	Other	55	7.96
	TOTAL	691	100.00%